Meters and Test Devices: 2005

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Current Industrial Reports

NOTICE

The 2005 new MA334T, Current Industrial Report (CIR) survey includes related product classes previously published in the discontinued MA334B, "Selected Instruments and Related Products."

Current data are released electronically on Internet for all individual surveys as they become available. Use: http://www.census.gov/mcd/. Individual reports can be accessed by choosing "Current Industrial Reports (CIR)," clicking on "CIRs by Subsector;" then choose the survey of interest. Follow the menu to view the PDF file or to download the worksheet file (XLS format) to your personal computer.

These data are also available on Internet through the U.S. Department of Commerce and STAT-USA by subscription. The Internet address is: www.stat-usa.gov/. Follow the prompts to register. Also, you may call 202-482-1986 or 1-800-STAT-USA, for further information.

SUMMARY OF FINDINGS

During 2005, the total value of shipments of meters and test devices totaled $15.7 billion, up slightly from the revised 2004 value of $15.6 billion. The 2005 figure includes electrical integrating instruments which increased $105 million from the 2004 revised value, an increase of 18 percent. Geophysical and meteorological products increased by $121 million since 2004. This represents a 10 percent increase. The largest significant decrease was in semiconductor component test equipment which decreased by $487 million within the electrical testing component category which included memory, microprocessor, and semiconductor test equipment. This decreased was partially offset by increases in voltage and wave measuring equipment. Overall, the test equipment industry remained stable.

For general CIR information, explanation of general terms and historical note, see the appendix.

Address inquiries concerning these data to Investment Goods Industries Branch, Manufacturing and Construction Division (MCD), Washington, DC 20233-6900, or call Jesse Dawson, 301-763-4746.
For mail or fax copies of this publication, please contact the Information Services Center, MCD, Washington, DC 20233-6900, or call 301-763-4673.

U S C E N S U S B U R E A U

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Table 1. Value of Shipments of Meters and Test Devices: 2000 to 2005
[Millions of dollars]

Product class	Product description	2005		2004	2003	2002	2001	2000
3345141	Integrating and totalizing meters for gas and liquids	1,437.6		1,427.5	1,329.2	1,232.8	1,094.5	1,062.5
3345143	Counting devices	485.2	r/	506.9	504.8	446.8	413.7	511.5
3345151	Integrating instruments, electrical	699.2		594.6	631.0	586.9	531.5	493.2
3345153	Test equipment for testing electrical, radio and communication circuits, and motors	9,037.5		9,215.1	7,563.8	7,682.5	10,628.0	13,982.0
3345155	Instruments to measure electricity	340.8	r/	331.9	389.7	384.5	371.2	439.7
3345194	Physical properties and kinematic testing equipment	1,778.5		1,732.9	1,581.3	1,703.5	1,718.1	1,845.3
3345195	Nuclear radiation detection and monitoring instruments	565.8		592.4	534.4	517.3	551.3	568.2
3345197	Commercial, geophysical, meteorological, and general-purpose instruments	1,354.7	r/	1,234.0	1,290.3	1,383.8	1,272.7	1,203.6

r/Revised by 5 percent or more from previously published data.

Table 2. Value of Shipments of Meters and Test Devices: 2005 and 2004
[Value in thousands of dollars]

Product code	Product description	No. of cos.		2005 Value		2004 Value
3345141	Integrating and totalizing meters for gas and liquids	34		1,437,612		1,427,461
3345141108	Gas meters, consumption registering	12		241,724	b/r/	283,757
3345141116	Liquid meters, positive displacement with registers and counters	26		828,187		776,015
3345141119	Parts, components, and accessories for gas and liquid meters, sold separately	28		367,701	a/r/	367,689
3345143	Counting devices, excluding motor vehicle instruments	42	a/	485,172	r/	506,947
3345143104	Mechanical, electrical, and electronic input counting devices	30		171,921	r/	154,235
3345143108	All other counting devices, including parts (toll meters, fare collection equipment systems, parking lot systems, taximeters, parking meters, etc.	19		313,251	r/	352,712
3345151	Integrating instruments, electrical	16	b/	699,153	a/	594,595
3345151104	A.C. watt meters	8	a/	323,105		(D)
3345151105	Demand meters	9	b/	196,019		184,899
3345151107	Other electrical integrating meters	5		(D)	a/r/	126,388
3345151109	Parts and accessories for integrating meters	11		(D)		(D)
3345153	Total test equipment for testing electrical, radio and communication circuits, and motors	270	a/	9,037,496		9,215,101
3345153102	Voltage, current, and resistance measuring equipment	40	a/	189,398		(D)
3345153111	Multimeters	11		229,415	r/	200,305
3345153114	Power and energy measuring equipment	12		68,650		66,935
3345153126	Waveform measuring and/or analyzing equipment, including oscilloscopes and spectrum oscilloscopes and spectrum analyzers	25		1,202,178	r/	1,002,596
3345153136	Signal generating equipment	24	a/	201,077		(D)
3345153141	Field strength and intensity measuring equipment	15	a/	72,513		(D)
	Impedance and standing wave ratio measuring equipment (transfer function measuring equipment):					
	Automatic test and measuring equipment:					
3345153149	Combination and/or group test sets	37		1,288,011	r/	1,264,054
	Component part test sets:					
	Semiconductor component test equipment:					
3345153153	Memory	13	a/	77,108		159,218
3345153157	Microprocessor	13		628,093		579,849
3345153159	Other semiconductor component test equipment	30		2,148,638	r/	2,601,430
3345153161	Loaded circuit board test equipment	11		118,748		191,547
3345153163	Other component part test sets and equipment	16		198,641		186,267
3345153165	Equipment and subassembly test equipment	10	a/	184,989	r/	165,023
3345153168	Standards and calibration equipment	21		152,751		156,026
	Communications test equipment:					
3345153175	Network analyzers	12		621,126	r/	609,669
3345153179	Fiber optics	6	a/	81,597		81,021
3345153183	Microwave	5	c/	36,858	c/	35,974
3345153185	Other communications test equipment	24		567,811	a/r/	516,318
3345153196	Other test equipment	73	a/	770,326	r/	800,266
3345153197	Parts and components for test equipment	43		199,568	r/	185,617

Table 2. Value of Shipments of Meters and Test Devices: 2005 and 2004
[Value in thousands of dollars]

Product code	Product description	No. of cos.		2005 Value		2004 Value
3345155	Total other instruments to measure electricity	60	a/	340,808	a/r/	331,910
3345155114	Electrical indicating instruments: panel type	21	a/	72,628	a/r/	89,949
3345155121	Electrical indicating instruments: portable	15		104,651	r/	81,858
3345155124	Electrical recording instruments	18	a/	81,988		80,338
3345155127	Other instruments to measure electricity	5		9,763		(D)
3345155135	Parts and accessories for indicating and recording instruments	24	a/	71,778		(D)
3345194	Total physical properties testing and inspection equipment and kinematic testing and measuring equipment	143	a/	1,778,497	b/	1,732,858
	Physical properties testing equipment, including hardness, tensile, stress, strain, abrasion, strength, torsion, wear, and similar testing equipment, including components and sold separately:					
3345194101	For testing of metals	22		483,281		489,576
3345194104	Other, including parts	51	a/	443,996		378,886
	Physical properties inspection equipment, including flaw detection, thickness measuring, and similar detection equipment:					
3345194107	For testing of metals	17	b/	213,221	b/	218,136
3345194109	Measuring and checking flow of fluids	15	c/	81,102	c/	102,639
3345194112	Other, including parts	48	a/	328,037	a/	317,200
3345194116	Kinematic testing and measuring equipment, including parts (including vibration, acceleration, and other motion testing equipment)	29	a/	228,860	a/	226,421
3345195	Nuclear radiation detection and monitoring instruments	39	a/	565,760	a/	592,420
3345195105	Nuclear monitoring instruments, (include environment, personal dosimetery, and medical monitors)					
3345195125	Nuclear instrument modules, n.e.c.	10	b/	47,698		41,157
3345195126	Radiation detecting elements, nuclear power supplies, and measuring and control devices that use beta, gamma, or neutron gauge technology	21		124,604		137,951
3345195127	Other nuclear radiation detection and monitoring instruments	16	a/	142,785	a/	167,304
3345195129	Parts and components for nuclear radiation and detection and monitoring instruments	13	b/	70,892	b/	74,010
3345197	Commercial, geophysical, meteorological, and general-purpose instruments	127	a/	1,354,698	r/	1,234,008
3345197119	Thermometers (all kinds)	39	a/	150,326	a/	137,346
3345197124	Meteorological electronics equipment and instruments	33	a/	378,462	a/	317,306
3345197127	Seismic instruments	8		148,946	r/	119,515
3345197135	All other instruments not listed above, including compasses, altimeters, humidit indicating and recording instruments, environmental gas detectors, air sampling instruments, dynamometers, etc.	80	a/	676,964		659,841

D Withheld to avoid disclosing data for individual companies. n.e.c. Not specified by kind.
r/Revised by 5 percent or more from previously published data.

Note: Percent of estimation of each item is indicated as follows: a/10 to 25 percent of this item has been estimated. b/26 to 50 percent of this item has been estimated. c/Over 50 percent of this item has been estimated.

Table 3. Shipments, Exports, and Imports of Meters and Test Devices: 2005
[Value in thousands of dollars]

Product code	Product description	Manufacturers' shipments (value f.o.b. plant)	Exports of domestic merchandise (value at port) 1/	Imports for domestic consumption 2/ (value) 3/
3345141108	Gas meters, consumption registering (except parts)	241,724	35,227	13,621
3345141116	Liquid meters (except parts)	828,187	60,863	8,694
3345141119	Parts, components, and accessories for gas and liquid meters, sold separately	367,701	99,383	173,760
3345143104, 108	Counting devices, n.e.c., including taxi meters, parking meters, and parts	485,172	117,282	202,939
3345151	Electricity meters	699,153	86,122	105,534
3345153102	Voltage, current, and resistance measuring equipment	189,398	242,081	153,224
3345153114	Power and energy testing equipment	68,650	241,664	105,083
3345153136	Signal generating equipment	201,077	113,503	50,798
3345153111, 126, 141, 149, 153, 157, 159, 161, 163, 165, 168, 175, 179, 183, 185, 196	Test equipment for testing multimeters, electrical, radio and communication circuits, and motors, n.e.c.	8,378,803	2,747,647	894,724
3345194	Physical properties testing inspection equipment and kinematic testing and measuring equipment	1,778,497	568,458	106,652
3345195	Nuclear radiation detection and monitoring instruments and equipment	565,760	308,550	128,188
3345197119	Thermometers	150,326	27,874	230,643
3345197127	Seismic instruments	148,946	19,508	19,617

n.e.c. Not elsewhere classified.

1/Source: Census Bureau report, EM 545, U.S. Exports.
2/Source: Census Bureau report, IM 145, U.S. Imports for Consumption.
3/Value represents the c.i.f. (cost, insurance, and freight) value at first port of entry in the United States plus import duties.

Table 4. Comparison of North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes and HTSUSA Import Codes: 2005

Product code	Product description	Export code 1/	Import code 2/
3345141108	Gas meters, consumption registering (except parts)	9028.10.0000	9028.10.0000
3345141116	Liquid meters (except parts)	9028.20.0000	9028.20.0000
334514119	Parts, components, and accessories for gas and liquid meters, sold separately	9028.90.0080	9028.90.0080
3345143104, 108	Counting devices, n.e.c., including taxi meters, parking meters, and parts	9106.20.0000 9028.90.0040 9029.10.0000 9029.90.0000	9106.20.0000 9029.10.4000 9028.90.0040 9029.10.8000 9029.90.2000 9029.90.8080
3345151	Electricity meters	9028.30.0000	9028.30.0000
3345153102	Voltage, current, and resistance measuring equipment (except multimeters)	9030.39.0040	9030.39.0040
3345153114	Power and energy testing equipment	9030.39.0080	9030.39.0080
3345153136	Signal generating equipment	8543.20.0000	8543.20.0000
3345153111, 126, 141, 149, 153, 157, 159, 161, 163, 165, 168, 175, 179, 183, 185, 196	Test equipment for testing multimeters, electrical, radio and communication circuits, and motors, n.e.c.	9029.20.6000 9030.31.0000 9030.82.0000 9030.20.0000 9030.90.8010 9030.90.8020 9030.90.8030 9030.90.8040 9030.90.8050 9030.90.8060 9031.80.8060	9029.20.6000 9030.31.0000 9030.82.0000 9030.90.4500 9030.90.8400 9030.90.8810 9030.90.8820 9030.90.8830 9030.90.8840 9030.90.8855 9030.90.8860 9031.80.8060
3345194	Physical properties testing inspection equipment and kinematic testing and measuring equipment	9024.10.0000 9024.80.0000 9024.90.0000	9024.10.0000 9024.80.0000 9024.90.0040 9024.90.0080
3345195	Nuclear radiation detection and monitoring instruments and equipment	9030.10.0000 9030.90.4000	9030.10.0000
3345197119	Thermometers	9025.11.4000 9025.19.8040	9025.11.4000 9025.19.8080
3345197127	Seismic instruments	9015.80.6000	9015.80.6000

1/Source: 2005 edition, Harmonized System-based Schedule B, Statistical Classification of Domestic and Foreign Commodities Exported from the United States.

2/Source: Harmonized Tariff Schedule of the United States, Annotated (2005).

Appendix.
General CIR Survey Information, Explanation of General Terms and Historical Note

GENERAL

The CIR program has been providing monthly, quarterly, and annual measures of industrial activity for many years. Since 1904, with its cotton and fats and oils surveys, the CIR program has formed an essential part of an integrated statistical system involving the quinquennial economic census, manufacturing sector, and the annual survey of manufactures. The CIR surveys, however, provide current statistics at a more detailed product level than either of the other two statistical programs.

The primary objective of the CIR program is to produce timely, accurate data on production and shipments of selected products. The data are used to satisfy economic policy needs and for market analysis, forecasting, and decision making in the private sector. The product-level data generated by these surveys are used extensively by individual firms, trade associations, and market analysts in planning or recommending marketing and legislative strategies, particularly if their industry is significantly affected by foreign trade. Although production and shipments information are the two most common data items collected, the CIR program collects other measures also such as inventories, orders, and consumption. These surveys measure manufacturing activity in important commodity areas such as textiles and apparel, chemicals, primary metals, computer and electronic components, industrial equipment, aerospace equipment, and consumer goods.

The CIR program uses a unified data collection, processing, and publication system. The U.S. Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic census, manufacturing sector. The manufacturing sector provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is too large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. The CIR program includes a group of mandatory and voluntary surveys. Typically the monthly and quarterly surveys are conducted on a voluntary basis. Those companies that choose not to respond to the voluntary surveys are required to submit a mandatory annual counterpart corresponding to the more frequent survey.

NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS), 1997

The adoption of the North American Industry Classification System (NAICS) in the 1997 Economic Census has had a major impact on the comparability of current and historic data. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those that left manufacturing are logging and portions of publishing. Prominent among the industries that came into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. The net effect of the classification changes are such that if the 1997 value of shipments data for all manufacturers were tabulated on an SIC basis, it would be approximately 3 percent higher.

Listed below are the NAICS sectors:

21 Mining
22 Utilities
23 Construction
31-33 Manufacturing
42 Wholesale Trade
44-45 Retail Trade
48-49 Transportation and Warehousing
51 Information
52 Finance and Insurance
53 Real Estate and Rental and Leasing
54 Professional, Scientific, and Technical Services
55 Management of Companies and Enterprises
56 Administrative and Support and Waste Management and Remediation Services
61 Educational Services
62 Health Care and Social Assistance
71 Arts, Entertainment, and Recreation
72 Accommodation and Foodservices
81 Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

FUNDING

The Census Bureau funds most of the surveys. However, a number of surveys are paid for either fully or partially by other Federal Government agencies or private trade associations. A few surveys are mandated, but all are authorized by Title 13 of the United States Code.

RELIABILITY OF DATA

Survey error may result from several sources including the inability to obtain information about all cases in the survey, response errors, definitional difficulties, differences in the interpretation of questions, mistakes in recording or coding the reported data, and other errors of collection, response, coverage, and estimation. These nonsampling errors also occur in complete censuses. Although no direct measurement of the biases due to these nonsampling errors has been obtained, precautionary steps were taken in all phases of the collection, processing, and tabulation of the data in an effort to minimize their influence.

A major source of bias in the published estimates is the imputing of data for nonrespondents, for late reporters, and for data that fail logic edits. Missing figures are imputed based on period-to-period movements shown by reporting firms. A figure is considered to be an impute if the value was not directly reported on the questionnaire, directly derived from other reported items, directly available from supplemental sources, or obtained from the respondent during the analytical review phase. Imputation generally is limited to a maximum of 10 percent for any one data cell. Figures with imputation rates greater than 10 percent are suppressed or footnoted. The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual yearly movements for nonrespondents may or may not closely agree with the imputed movements. The range of difference between the actual and imputed figures is assumed to be small. The degree of uncertainty regarding the accuracy of the published data increases as the percentage of imputation increases. Figures with imputation rates above 10 percent should be used with caution.

DATA REVISIONS

Statistics for previous years may be revised as the result of corrected figures from respondents, late reports for which imputations were originally made, or other corrections. Data that have been revised by more than 5percent from previously published data are indicated by footnotes.

DISCLOSURE

The Census Bureau collects the CIR data under the authority of Title 13, United States Code, which specifies that the information can only be used for statistical purposes and cannot be published or released in any manner that would identify a person, household, or establishment. "D" indicates that data in the cell have been suppressed to avoid disclosure of information pertaining to individual companies.

EXPLANATION OF GENERAL TERMS

Capacity. The maximum quantity of a product that can be produced in a plant in 1 day if operating for 24 hours. Includes the capacity of idle plants until the plant is reported to be destroyed, dismantled, or abandoned.

Consumption. Materials used in producing or processing a product or otherwise removing the product from the inventory.

Exports. Includes all types of products shipped to foreign countries, or to agents or exporters for reshipment to foreign countries.

Gross shipments. The quantity or value of physical shipments from domestic establishments of all products sold, transferred to other establishments of the same company, or shipped on consignment, whether for domestic or export sale or use. Shipments of products purchased for resale are omitted. Shipments of products made under toll arrangements are included.

Interplant transfers. Shipments to other domestic plants within a company for further assembly, fabrication, or manufacture.

Inventories. The quantity or value of finished goods, work in progress, and materials on hand.

Machinery in place. The number of machines of a particular type in place as of a particular date whether the machinery was used for production, prototype, or sampling, or was idle. Machinery in place includes all machinery set up in operating positions.

Net receipts. Derived by subtracting the materials held at the end of the previous month from the sum of materials used during the current month.

Production. The total volume of products produced, including: products sold; products transferred or added to inventory after adjustments for breakage, shrinkage, and obsolescence, plus any other inventory adjustment; and products that undergo further manufacture at the same establishment.

Quantities produced and consumed. Quantities of each type of product produced by a company for internal consumption within that same company.

Quantity and value of new orders. The sales value of orders received during the current reporting period for products and services to be delivered immediately or at some future date. Also represents the net sales value of contract change documents that increase or decrease the sales value of the orders to which they are related, when the parties concerned are in substantial agreement as to the amount involved. Included as orders are only those that are supported by binding legal documents such as signed contracts or letter contracts.

Quantity and value of shipments. The figures on quantity and value of shipments represent physical shipments of all products sold, transferred to other establishments of the same company, or shipped on consignment, whether for domestic or export sale. The value represents the net sales price, f.o.b. plant, to the customer or branch to which the products are shipped, net of discounts, allowances, freight charges, and returns. Shipments to a company's own branches are assigned the same value as comparable appropriate allocation of company overhead and profit. Products bought and resold without further manufacture are excluded.

Unfilled orders (backlog). Calculated by adding net new orders and subtracting net sales from the backlog at the end of the preceding year.

HISTORICAL NOTE

Data on selected instruments and related products have been collected by the Census Bureau since 1961 on survey MA334B.

Beginning in 2005, a portion of data for MA334B, Selected Instruments and Related Products, will be published under the new survey MA334D, Defense, Navigational and Aerospace Electronics. Additional data for MA334B can be found on surveys MA334A, Analytical and Biomedical Instruments, MA334C, Control Instruments, and MA334T, Meters and Test Devices. Historical data may be obtained from Current Industrial Reports available at your local Federal Depository Library.

Stocks. Total quantity of ending finished inventory.